

# PROCEEDINGS OF THE ROYAL ENTOMOLOGICAL SOCIETY OF LONDON

## SERIES C. JOURNAL OF MEETINGS

VOLUME 16.

No. 3, 1951

### ORDINARY MEETING

WEDNESDAY, 4TH APRIL, 1951, at 5.30 p.m.

#### AGENDA

1. Confirmation of the Proceedings of the Ordinary Meeting held on 7th March, 1951.
2. Recommendations of candidates for Fellowship.
3. Announcement of election of new Fellows.
4. Additions to the Library.

#### *Purchased.*

- Hendel, Fr. *Zweiflügler oder Diptera. II. Allgemeiner Teil.* 8vo. Jena. 1928. [Die Tierwelt Deutschlands 11].
- Schoenemund, Eduard. *Eintagsfliegen oder Ephemeroptera.* 8vo. Jena. 1930. [Die Tierwelt Deutschlands 19.]

#### *Presented.*

- Albin, Eleazar. *A natural history of spiders and other curious insects.* 4to. London. 1736. [H. J. Turner bequest.]
- Bergstraesser, J. A. B. *Nomenclatur und Beschreibung der Insecten in der Grafschaft Hanau-Münzenberg. Jahrgang 1-4.* 4to. Hanau. 1778 [-83]. [H. J. Turner bequest.]
- Boisduval, J. B. A. D. de. *Europaeorum lepidopterorum index methodicus. Pars prima.* 8vo. Paris. 1829. [H. J. Turner bequest.]
- Boisduval, J. B. A. D. de, and Guenée, A. *Histoire naturelle des Insectes. Species général des Lépidoptères. Tom. V-VII. Noctuérites, par A. Guenée.* 8vo. Paris. 1852. Formerly owned by Herrich-Schaeffer and containing his notes. [H. J. Turner bequest.]
- Creighton, William Steel. *The ants of North America.* *Bull. Mus. comp. Zool. Harv.* 104: pp. 585, 57 pls., 1950. [The Publishers.]
- Groves, Joan R., and Massee, A. M. *A synopsis of the world literature on the fruit tree red spider mite Metatetranychus ulmi and its predators, by Joan R. Groves, with a brief review of the problem by A. M. Massee.* 8vo. London. 1951. [Commonwealth Institute of Entomology.]
- Haworth, A. H. *Lepidoptera Britannica.* 8vo. Londini. 1803 [-28]. [H. J. Turner bequest.]

- Hübner, J. *Sammlung Europäischer Schmetterlinge. Noctuae. Plates only* (185). 4to. Augsburg. 1802-41. [H. J. Turner bequest.]
- L'Admiral, Jacob. *Naauwkeurige waarneeningen van veele gestalt-verwisselende gekorvene diertjes.* fol. Amsterdam. 1740. [H. J. Turner bequest.]
- Miller, David. *Catalogue of the Diptera of the New Zealand sub-region.* *Bull. Dep. sci. industr. Res. N.Z.* **100** : pp. 194. 1950. [The Author.]
- Moufet, Thomas. *Insectorum sive minimorum animalium theatrum.* 4to. London. 1634. [H. J. Turner bequest.]
- Mueller, P. L. S. *Des Ritters Carl von Linné vollständiges Natursystem nach der zwölften Lateinischen Ausgabe und nach Anleitung des Holländischen Houttuynischen Werks, mit einer ausführlichen Erklärung ausgefertigt von P. L. S. Müller. Fünfter Theil. Von den Insecten.* 2 Bde. Nürnberg. 1774-75. [H. J. Turner bequest.]
- Nagano, K. *Nawa icones japonicorum insectorum.* Vol. 1. *Lepidoptera Sphingidae.* [All published.] fol. Gifu, Japan. 1904. [H. J. Turner bequest.]
- Wood, William. *Index entomologicus ; or, A complete illustrated catalogue of the lepidopterous insects of Great Britain.* 8vo. London. 1833-38. In original wrappers. [H. J. Turner bequest.]

In addition, separates were presented by Dr. B. P. Beirne ; United States Department of Agriculture ; Department of Agriculture of Canada ; Mr. E. P. Hodgkin ; The Smithsonian Institution ; Dr. T. T. Macan ; Professor G. D. Hale Carpenter ; Mr. T. R. E. Southwood ; Rothamsted Experimental Station ; Director of Agriculture, British Guiana ; Mr. N. D. Riley and Professor P. A. Buxton.

5. Admission of Fellows.

6. Exhibits.

**Fellows are particularly requested to bring suitable exhibits to the Meeting even though it may not be possible to announce their intention to do so beforehand.**

*Note.*—To avoid congestion in the Library and to enable exhibits to be displayed to greater advantage, a table has been placed in the meeting-room for this purpose. Fellows are asked to place their exhibits on this table, with a suitable explanatory note, as soon as possible on the afternoon of the meeting, so that they are available for inspection there before the meeting opens.

7. Communications.

#### **Professor G. D. Hale Carpenter, M.B.E., D.M.**

The genus *Euploea* (Lep. DANAIIDAE) in the South Pacific from Papua to Australia and Tahiti.

#### [ABSTRACT]

This is a bio-geographical study of about 9100 specimens, many others with inadequate geographical data being ignored.



The subject will be discussed under the following headings :

(1) Taxonomic.

Some revision of nomenclature has been necessary, and twenty new "forms," using the word in the widest possible sense, have been found.

The total number of forms in the area considered is 137.

(2) The spot pattern, its origin, and variation.

There are four systems of spots on each wing : for each named form of *Euploea* the details for types, and the maximal and minimal development, are recorded for each sex. This will be a standard with which comparison could be made in future years, for the variations observed, indicate that evolutionary change may be expected.

(3) The geographical distribution of each form has been recorded.

(4) The white-bordered variants on certain of the Solomon Isles suggest mimetic (Müllerian) associations.

(5) Subdivision of the whole area into smaller units according to the character of the *Euploea* fauna ; the salient features of each area and the origin of its fauna.

(6) Evidence in support of the theory of moving land masses.

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TEA will be served in the Library before the meeting.

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A card index of Fellows' addresses arranged on a geographical basis is now available for the use of Fellows in the Society's Rooms. Addresses in Great Britain are grouped under counties ; elsewhere under Dominions, Colonies, Foreign States, etc.

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### ADMISSION OF FELLOWS

Any Fellow who has not been formally admitted to the Society under Chapter XIV, Section 4 of the Bye-laws and attends the meeting on 4th April, 1951, is requested to inform the Secretary before 5.15 p.m. on that date.

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### Festival of Britain and IXth International Congress of Entomology, Amsterdam, 17th-24th August, 1951.

The Council of the Society wishes to assist entomologists from overseas who may be visiting England and Holland in connection with the above events. Visiting entomologists will be invited to use the Society's rooms, but, in addition, it is hoped that some Fellows will be able to offer personal hospitality.

Fellows who are able to offer such hospitality are invited to do so through the Society, by writing to the Secretary indicating whether their offer applies to (1) a particular entomologist, (2) a person interested in a particular branch of entomology, or (3) any visiting entomologist, and to add the nature of the hospitality available.

Invitations relating to the periods immediately before or after the Amsterdam Congress are likely to be of most value to visitors.

## JULY AND SEPTEMBER MEETINGS.

**Alteration of Arrangements**

*July.*—The Council of the Society has accepted an invitation from the Vice-Chancellor of the University of Manchester to hold the July meeting of the Society in Manchester to enable Fellows of the Society living in the South to meet northern entomologists. The Meeting normally due to be held on 4th July will therefore be replaced by a week-end meeting from **20th to 22nd July, to be held in the University of Manchester.** Further details will be circulated as soon as available.

*September.*—For the benefit of overseas entomologists passing through London on their way to the Amsterdam Congress, the Council has decided to hold an Ordinary Meeting on **Wednesday, 15th August.** This will replace the meeting normally due for 5th September.

## PROCEEDINGS OF THE ORDINARY MEETING HELD ON 7TH MARCH, 1951.

Mr. N. D. Riley, President, in the Chair.

Present, 56 Fellows and 12 Visitors.

The minutes of the Ordinary Meeting held on 7th February were confirmed and signed by the President.

The President extended a welcome to Mr. D. C. Swann of the Waite Agricultural Research Institute, Adelaide, South Australia, now on a visit to this country.

The President called attention to an alteration in the arrangements for the July and September meetings, and said that, at the invitation of the Vice-Chancellor of the University of Manchester, the July meeting of the Society would be held in Manchester during the week-end 20th–22nd July to enable Fellows of the Society living in the South to meet those living in the North, and northern members of kindred societies. This meeting would replace that announced for 4th July on the printed card. Council had also decided to hold a meeting on 15th August for the benefit of overseas entomologists passing through London on their way to the Amsterdam Congress, and to cancel the meeting due for 5th September.

The names of the following candidates for election were read for the first time: M. Bibikoff, I. G. Farwell, Miss M. E. Godfrey, B.Sc., A.R.C.S., E. Gowing-Scopes, R. I. Lorimer and R. B. W. Lowndes.

For the second time (taken as read): Mrs. B. R. Aspoas, J. R. Audy, C. L. Bell, C. S. H. Blathwayt, M.A., J. D. Bradley, P. J. Burton, J. D. Carthy, M.A., Ph.D., R. W. Crosskey, B.Sc., A.R.C.S., L. Davies, Ph.D., R. L. Edwards, Q. A. Geering, B.A., J. B. Gilpin-Brown, R. A. Harrison, H. Hurtig, J. R. Leigh, R. C. Muir, W. J. Perry, M.Sc., C. L. Remington, A.M., Ph.D., Eleanor H. Slifer and G. E. Stride.

The Secretary read the names of the following newly-elected Fellows of the Society: Guran Lal Arora, M.Sc., Zoology Dept., Imperial College of Science and Technology, London, S.W.7; J. H. Burman, Marden, 74, Royal George Road, Burgess Hill, Sussex; Hsiu-fu Chao, M.S., Fernald Hall, University of Massachusetts, Amherst, Mass., U.S.A.; Nirmal Chandra Chatterji, M.Sc., State Agricultural Research Institute, 230, Netaji Subhas Road, Calcutta, 33,



West Bengal, India ; Dr. P. Fenjves, Dipl. Ing. Agr., División de Entomologia, Apartado 4643, Maracay, Estado Aragua, Venezuela ; G. R. Gradwell, B.A., Hope Dept. of Entomology, University Museum, Oxford ; Dr. R. L. Gupta, B.Ag., Ph.D., Assoc. I.A.R.I., F.E.S.I., Madhya Pradesh, Agricultural College, Nagpur, India ; Prof. Brian Hocking, University of Alberta, Edmonton, Alberta, Canada ; The Rev. T. B. Kitchen, The Vicarage, Howden, Goole, Yorks ; Chandu Kurian, M.Sc., Entomology School of Research, Zoology Dept., St. John's College, Agra, India ; F. H. Lees, The Gables, Maidencombe, Torquay, Devon ; J. R. Mair, 92, Kintillo Drive, Knightswood, Glasgow ; I. W. B. Nye, 16, Hove Park Way, Hove, 4, Sussex ; S. N. Rao, M.Sc., Entomology School of Research, St. John's College, Agra, India ; D. J. W. Rose, Nambour, 30, Buckland Avenue, Slough, Bucks ; F. N. Wright, B.A., 37, Beechurst Avenue, Cheltenham, Glos.

Thanks were voted to donors of gifts to the Library since the last meeting.

Mr. J. H. Burman and Dr. J. T. Salmon signed the Obligation Book and were admitted Fellows of the Society.

Dr. H. E. Hinton gave an account of the functional significance of the retention of the last larval skin by the exposed pupae of some beetles. When the pupae of *Chrysomela tremula* F. and those of some other species of the genus are stimulated, their movements cause the expulsion of a poisonous fluid from the attached cuticle of the last instar larva. The poisonous fluid is contained in the reservoirs of the larval glands, and at ecdysis the fluid contained in these cuticle-lined reservoirs is not lost when the cuticle is pushed to the posterior end of the pupa. When the pupa is caused to jerk upwards, pressure on the reservoirs causes a drop of fluid containing salicylaldehyde to appear above the orifice of the thoracic reservoirs. If the movement is violent, some of the anterior abdominal reservoirs may be similarly affected. When the pupa returns to its normal position, the somewhat elastic cuticle of the reservoirs causes them to recover their shape so that the drop of fluid is sucked in again. Less developed but similar habits and structures were described in another Chrysomelid, *Plagioderma versicolora* Laichart.

Mr. C. R. Ribbands (a visitor) gave a paper on the effective flight range of the honey bee, an abstract of which appeared on page 6.

In the discussion which followed, Dr. O. W. Richards asked whether in fact bees would fly such relatively long distances if a supply of honey happened to be available near at hand, and called attention to the practical disadvantages of splitting up apiaries. Mr. Ribbands agreed that, given the same quality, bees would take their supply from the nearest source : apiarists had not yet appreciated the importance of distance.

Dr. Wigglesworth said this problem had been investigated from another angle—that of how much flight fuel the bee could carry. He was under the impression that after a maximum feed the flight range was about three miles, but Mr. Ribbands replied that it was in fact greater than this, Eckhert having recorded gains by colonies flying five or five-and-a-half miles. It had been established that bees could fly ten miles.

In reply to an enquiry by Miss Longfield, Mr. Ribbands said there was no evidence that carrying capacity varied with different strains of bees.

Mr. D. C. Swann, a visitor, said that in South Australia the law required that commercial apiaries must be two miles apart, implying that a flight range of one mile was sufficient.

Mr. J. H. Burman described his experience of moving a colony of bees to a new location at a distance of only a mile. It was feared that the bees would return to the old site, but in fact none did so. Even after a major disturbance caused by uniting a stray swarm with the colony, in error, only about a dozen bees returned to the old position.

Mr. W. V. Harris exhibited twenty-five slides in Kodachrome illustrating some features of termite mounds in East Africa. Large mounds constructed by *Macrotermes goliath*, *M. bellicosus* and *M. natalensis* were shown to indicate that the soil type as well as the species of termite had an influence on the ultimate shape of the mound. The effects of large mounds on vegetation was seen in forest trees and thicket surviving as islands when fire had destroyed the rest of the forest, and in the development of thicket communities on mounds in swampy grass plains. The use of explosives to destroy mounds in land cleared for mechanical cultivation in Tanganyika was illustrated. A variety of small mounds built by *Cubitermes* species were also shown.

The President asked whether systematic work was tending to alter the present specific conception in termites. So few morphological characters being available for diagnosis, it had occurred to him that the number of species hitherto accepted might well be exaggerated. Mr. Harris agreed that, while generic differences were well defined, specific differences were less clear, and it looked as though the number of species might be reduced.

The President referred to an Australian species reputed to make mounds showing a gradual change in shape across the continent. Mr. Swann said the species was undoubtedly *Coptotermes acinaciformis*. In South Australia no mound was made; further north in East Australia, where the climate was wetter, mounds appeared above ground. Other species made mounds in areas where this species did not. Mr. Swann referred generally to the large termite fauna in Australia, especially in the wetter areas, where the mounds dominated the landscape and were a major economic problem.

E. B. BRITTON, *Hon. Secretary.*

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The next meeting will be held on 2nd May at 5.30 p.m.